

Architecture Complexities and Contradiction

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Abstract

The complexities of architecture create a formidable barrier to achieving the building quality, the values that the architect seeks to create. The building must enhance the lives, must embrace its social purpose, must develop a rapport with its site, its environment, must have functional integrity, and structural firmness, making an expressing statement, with beautiful facades, whose appropriateness and relevance come from a rational, common sense, architectural sensitivity and unifying the whole. It must have a sense of timeliness and a sense of tradition; timeliness because it expresses its age, a century whose processes and technique should usher in one of the great architectural epochs. The magnitude of the problems and opportunities facing the architect today requires him to be both aware of the interaction of disciplines and the forces that act in his time, and be responsive and sensitive to them. At the same time, however, architecture must look beyond contemporary forces and discipline and must recognize that objects themselves are perceived and reacted to in different ways by different people.

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Introduction

We are not sure what we want as a society, we want it at a bargain price. The extra expense of the building was never satisfactorily explained. Modern and functional have become synonymous with acceptable minimum; anything that does not represent a viable investment, is discarded as useless luxury. Occasionally classical design elements are injected because they are considered good for prestige and public relations. The modern movement of architecture was the expression of a new and better way of life for many; a social promise, but is now one of resignation. Suburban areas have developed stupefying sameness identical boxes on identical – sized lots with a little something at the front façade. Apartment buildings have become monotonous and with minimal balconies and scant roof gardens. Our society will never be great until our cities are great. We are creating bleak, oppressive city scape, devoid of principles, despair of mediocrity. Buildings of architectural consequence are continually being raised to make way for parking lots and other so called improvement. Bulldozer cult is a sad reflection upon the values of an affluent society. Urban physical environment seems to accelerate our deteriorating condition. Suffocating subways, traffic jams, parking problems foul air and polluted waters are now the facts of urban life. A very large segment of the urban population lives not where it wants to, but where it has to. The result is a poor choice between jammed traffic to mass transit facilities. Lois Sullivan said we built what are

were and we were what are built. Without good planning, without the pursuit of sound objectives, we fall victim, as our surrounding testify to accelerated chaos.

Architecture is a social art. A building's influence extends beyond the property lines. Consequently the architect must assume a vital role in shaping our physical environment. The establishment of good planning in relation to our potential alone would not alter our basic values; values that compromise irrevocably the larger intentions of architects and planners. Our cities need to be places of inspiration and stimulation that permit both privacy and community; centers of human thought and achievement that allow man to develop fully as an individual, even places of beauty.

The Industrial Revolution, rather than evolution, has produced an era of change. It has also produced a time of opportunity which we have still fully to realize. The external world of our actions and the internal world of our thoughts have become divided, and the result has been a lack of unity in our lives, a fragmentation of collective and individual interest, of intellectual and emotional reactions. Although the Greeks thought in terms of idealism, it was with a fundamental difference from those who, for example in the nineteenth century, relied upon classical patterns of thought. The Greeks were not atomistic in the application of their knowledge; they were poets, philosophers, writers and teachers. The Renaissance architect, likewise, believed in the idea of the universal man; art and science appeared as one.

The role of material

The architect, like the sculptor naturally desires to express the intrinsic potential characteristic of the materials he employs and, conversely, to employ suitable materials to realized desired ends. In the past, structures had been essentially forms in compression, discontinuous structures of stone or brick where one element was placed upon another. With their slender constructions, the Gothic builders had tried to extend the limitation of the building technique to the extreme. With steel and reinforced concrete, it became possible to achieve greater structural efficiency with less visible effort, greater heights, the enclosure of more space with less mass and greater flexibility in the enclosure of that space.

Without steel, the delicacy and transparency of Buckminster Fuller's geodesic dome could not have been achieved, nor could Mies van der Rohe's elegant structures be possible. On the other hand, reinforced concrete is a plastic material that can change in shape as it expresses the exact flow of stresses through a structure, a material that, with the exception of expansion joints, can be endlessly continuous, where the enclosure of space and structure can be one. Precast concrete for precision and speed of assembly, systems and improved methods of formwork for better finished surfaces. Naturally this has led to great diversity of expression.

The role of architectural program

The move away from aesthetic is evident in buildings designed in the modern movement of architecture to respect the idea of growth and change, and to complement their environment.

Walter Gropius the founder of the Bauhaus tried to change the academic tradition established by the school of the Beaux-Arts in Paris, and develop a new comprehensive set of principles appropriate to the twentieth century epoch. However, the Beaux-Arts system remained with us, instead of a more fundamental one to solve the complexity of our present problems and the sources available to solve them. The Beaux-Arts avoided the realities of a problem by inventing a schedule of detailed requirements called the program. This approach encouraged the architect to think in narrow terms. Today, our legacy from this is the architect who follows the practice of working a client-formulated program. Clients presenting the architect with a program for a new building inevitably think of the familiar building that resembles what they think they will need. Invariably, this is a myopic view of needs and starts the architect over halfway along in the creative process, rather than at the beginning, when an imaginative and perceptive interpretation of real needs should occur.

Squish

Another innovation was the sketch design known as squish, a method of testing students' abilities which often produced designs that were brilliant, isolated in a private cubicle that divorced them from all sense of reality, a rather superficial nature, waiting for the detached moment of inspiration, were given a specific program which they then proceeded, usually during the course of the day, to resolve into a preliminary design presentation. This type of problem solving still persists in our design studios.

The role of history and cultural forces

With the resources of knowledge at an architect's disposal today, his training should be of a different nature. The architect has to educate himself to become an innovator. Most architects need a framework for action for their work to have collective meaning and clarity. The student of architecture should be exposed to many aspects of the subject during his formative years. Design is of course vital. But an architect must also be taught to sense the forces in a structure, to understand the history of architecture; as once said "you cannot not know history", not as one of appearances, but as form deriving from cultural forces and from methods of construction; to have knowledge of the natural laws of the human environment and of the individual response to them. To be aware of aspects of environmental control, visual and acoustical comfort which can enrich an architectural solution when they are a part of the design process, almost always detracts.

The need for a more viable design process, one that respects complexity and our scientific potential, is naturally related to the type of world we see in the future. The

students should be educated to see the world in terms of rapidly changing environment which science is creating, with all its potentialities, and be prepared for a new world which will be unlike our current world.

Chaos, Nostalgia and Eclecticism

Since there was no agreement on how to determine and direct change, random forces began to create the uncontrolled fabric of cities. The architects of the century have produced brilliant individual structures, but this has been at the expense of the unity, harmony and scale that are fundamental to a civilized and healthy environment. The architect must attempt to bring diversity into a harmonious and viable unity to preserve diversity while not allowing it to freewheel into chaos.

Eclecticism produced architecture detached from the reality of the pressures of the industrial revolution. Art and science were pursuing diverse paths and architecture was adrift. What architecture needed was not nostalgia for the past, but the utilization of industry's new potential. Structures that have become of our age and stir our imagination with their scale and daring should be unacceptable in the 21st Century with its challenges coming about by advanced science and technological invention. It is strange to see the retreat to the preference for the known, to the style of classic architecture and the trend of eclecticism which was seductive to those desiring dignified, prestigious buildings. Our new cities are now charged with an architecture of borrowing and free selection. This trend produced an architecture detached from the reality of the pressures of the new technology. The result was a reaction from the most important facts of the time.

In fact, what architecture needed was not nostalgia for the past, but the utilization of industry's new potential in order for our architecture to tackle its own particular problems. An example is the Crystal Palace for London's great exhibition designed in 1851 by Joseph Paxton who employed contemporary industrial techniques to produce a completely prefabricated structure of cast iron and glass with its lightness, transparency, machined elegance and speed of execution. Now this system of construction is one of the principal influences on the development of an American architectural style, while the English, who created themselves this system of construction, had turned their backs on that industrial technology. Why? Because William Morris stated that "roots and basis of all art lies in the handicrafts"!

But it was Louis Sullivan who clarified the implication of designing for height; "It must be tall, every inch of it tall. The force and power of altitude must be in it, the glory and pride of exaltation must be in it. It must be every inch a proud and soaring thing, rising in sheer exaltation that from bottom to top it is a unit without a single dissenting line". Also, the desirability of natural light for commercial office buildings caused the reduction of walls as much as possible, filling the voids with glass.

Reacting against the decorative excesses of the Art Nouveau Adolf Loos wrote “The evolution of culture marches with the elimination of ornament from useful objects” while in the same year, H.P. Berlage wrote “and thus in architecture, decoration and ornament are quite inessential while space creation and the relationships of masses are its true essentials”. Obviously, there were economic reasons for eliminating decoration.

Evolving Form

Mies van der Rohe believes that architecture is neither a fashion nor something eternal but is a part of an epoch; not everything, but the essence of an epoch, an expression of its energy. He believes that this essence is the evolving form that is not invented, but which is working on without being aware of it; “And when this great form is fully understood then the epoch is over – then there is something new”.

Mies encouraged his students to analyze the intellectual and cultural aspects of other periods and the significance of their buildings to their epoch with relation to their similarities and differences to ours. To Mies, his epoch is under the influence of science and technology. To Mies, Form is not the aim of his work, but only the result. For him form, by itself, does not exist. His buildings were glass skins separated from the structural bones behind. He became convinced that it was not light and shadow that were important, but reflections. Mies’ house establishes a harmony by receding, so that the landscape itself becomes the suggested space to be lived in. Contrary to Sullivan’s idea that “form follows function”, Mies says that while form cannot change, function does; “We do not let the function dictate the plan. Instead let us make room enough for any function”. The project for a Museum in a Small City, in 1942, one of Mies’ first universal space, had various elements arranged under a single roof structure, producing a free-flowing space reminiscent of that of Barcelona Pavilion. Mies commented that the first problem had been to establish the museum as a center for the enjoyment, not the internet of art. In its order, clarity and discipline the Gallery of the twentieth century is as typical of Mies’ handling of space and consideration of a building as the Guggenheim Museum in New York City was of Frank Lloyd Wright’s.

The apparent simplicity of Mies’ architecture stems from a total rejection of the inessential; “Less is more” he says. Refinement ensures a consistency of expression rather than the production of a new form for each new problem. Wright said that “architecture which denies aesthetics is like food in capsule form”. It is really easy to satisfy the function and stability, the commodity and firmness, but it is rare that we find high aesthetic satisfaction, particularly in our times, in our environment. Art has been defined as the conscious, creative and imaginative act whereby man expresses his emotions. If architecture is an art, then it is an emotional expression; it then becomes concerned with shape and form. Wright said; “In the arts, every problem carries within itself its own solution, and the only way yet discovered to reach it is a very painstaking

way; to look sympathetically within the thing itself, to proceed to analyze and sift it, to extract its own consistent and essential beauty, which means its common sense truthfully idealized. There lies the heart of the poetry that lives in architecture". For Rapson, "individual creativity can be summed up in a prescription found in Buddhism; "Develop an infallible technique and then place yourself at the mercy of inspiration". Bruce Goff a teacher of architecture at the University of Oklahoma in 1947 said; "I tried to teach the students to learn from what had been done, but more important to think their own way as much as possible". It is hard for students to distinguish between inspiration, influence and imitation; Goff's buildings were to inspire, influence and be imitated. "Students are generally considered as receptacles in which to pour prefabricated education rather than persons to bring something out of. This kind of education seems totally inorganic to me. We tried to relate our work to potentials rather than accomplishment", said Goff. Mies says that he has no use of an architect who thinks he has to invent a new style of architecture every Monday morning; I think you have to invent one for each building whether it is Monday morning or not "said Mies.

When we look to Egyptian architecture we cannot begin to see it as they did. We see the residue of its more abstract quality, rather than its functional quality. Design response today is not a reiteration of pre-digested theory but a search for pertinent and responsive facts. Notions of function, structure and technology have become tempered by cultural, environmental and psychological truths. In a world of finite resources, presumptuous was to become increasingly conspicuous. The value of history has grown in importance, generally as an enriching influence, for some architects a source of forms to copy, for others a stimulus to explore the many interlocking systems that can direct an evolving design. Allusion to a cultural pattern is the forerunners of new and more complex patterns, whose pertinence grows out of incorporation. Geometry has become an even more persuasive organizing device, as it enriches configurations of space, expresses lines of movement, and fuses elements within a building and a building within a context. Although the volume of architectural work has shrunk dramatically, today's even more rigorous, fundamental questioning is a sign of spirit and vigor rather than of a lack of confidence. So, in diversity there is a wonderful optimism.

Truth and constructional honesty

The desire for current architecture is for truth at any price, in all designs without producing new principles. In respect to culture, the humanism is emphasized, and conviction that a new order could be constructed without reference to the old and even in opposition to it. The natural sciences contributed to the new intellectual orientation because the new hypotheses suggested that reality might be more than the senses and reasons could be apprehend and might be discovered by the imagination. Some mysteries had been unveiled by scientific discoveries and others were being studied so that every architect believed that he can unveil more of them. Ever since the architects have taken

one of the two stands towards science. Either they profited from it by assigning to art a rational basis, or they revolted against it in the name of the rights of imagination. Other architects refused to rely on emotions produced by a response to appearances, stating that they wanted to supplant the sensationalism of the Impressionists and they wanted to make contact with a truer and more profound reality. Out of this grows the denial of traditional culture, and the profound suspicion of historical values. In fact, the attempt to bypass history by turning to non-historical cultures. Those who proclaimed their adherence to the machine age was another means of avoiding history and projecting themselves into the future and the need for the absolute. Thus digital architecture is a new attempt to discover the proportional and mathematical laws that are supposed to rule and regulate nature. It is analysis meant to restore the deeper and most primary values of the visual idiom.

However, when these revolutionary architects turned their attention to the work of the pioneers in architecture in the museums, they discovered to their amazement that almost all the great masters of architecture can be considered Cubists from one point of view – to the extent that they have perceived and expressed the lasting structural values of reality.

Up to the beginning of this century taste in architecture did not keep up with the rapid changes but they repeated the forms of the past in a mechanical manner. Once it did occur, however, the revolt against tradition was more violent even though the reform of architectural concepts has had a much greater social importance. The principles of the new taste are based on the correspondence between form and function and the organic interrelations of the form.

If the work of architecture is no longer an intellectual representation of nature but a fact of reality, that is, if it is a creation that is artistically valid as an object, in it and not for what it represents, then the activity of the architect is essentially the technical process of the craftsman. The architect neither creates nor invents but obeys a profound law of reality and can discover within himself this law to the extent that he divests himself of everything in him that is conventional and that is sentimental or emotive habit.

The architect Antonio Sant'Elia, the futurist, expressed the most original ideas and is epitomized in the concepts of simultaneity and plastic dynamism. Nonetheless, he was more preoccupied with his purely Italian heritage than with the European traditions of Impressionism. He spoke of synthesis, yet not of a synthesis of the elements of vision, but of the synthesis of empirical fact.

The work of architecture must have a vitality of its own independent of the object it may represent. From the beginning the architect should have the solid shape, as it were, inside his head; he thinks of it, whatever its size, as if he were holding it completely enclosed in the hollow of his hand. Because he visualizes his work in this way, he realizes its volume,

as the space that shape displaces in the air. That part of the artist's working process that is conscious must resolve conflicts, organize memories, and prevent him from trying to walk in two directions at the same time. But form must be felt as pure, solid form, not a description or reminiscences.

For this reason form is outside of history and is pure presence. It becomes apparent that a complex form cannot be defined this way since it has to be assembled in a composite process. In contrast to the composite or constructed form, the elementary form is organic, to borrow a definition from Frank Lloyd Wright's architectural theories. Form that is abstract, however, is organic and shaped according to internal laws assembled from reality, that is, is concrete and profoundly realistic. This theory of abstract form as absolute reality supersedes the ambiguities of Cubist and Surrealist theories and their dialectical predicament of being caught in a continuous contrast with representational form. For as the absolute presence is not realized with immediacy in the Impressionist sense but as form that realizes the spirit in its immediacy. Hence, abstract form has been reabsorbed into the theory of empirical experience of the Impressionists, and European architecture has discovered the road reuniting it with its traditions and through this, justifies itself. It is not accident that architects once again, like the Impressionists, considered the outdoors the proper setting for this work.

Modern architecture has produced few masterpieces, but has been the object of tremendous ideological movement. The introduction of cement and steel construction and the great advances engineering revolutionized traditional building methods. It is not difficult to realize that the Crystal Palace built in London for the Great Exhibition and the Eiffel Tower in Paris, if not works of architecture, certainly are important affirmation of constructional honesty and seriousness in comparison with the eclectic and incoherent combining of historical styles than usual in public buildings.

Unity of structure and ornament

At this time the Industrial Revolution produced two new problems; the crisis in handicrafts and the adjustments required by the tremendous population increases in the cities. In England Ruskin and William Morris held industry responsible for the destruction of traditions of craftsmanship and the rapid progress toward a new barbarity and supported a return to the handicraft community by arguments and direct action. The ability of German industry, starting from the same premises as Ruskin and Morris, to maintain or improve the quality of production was considerable aid to social progress. Instead of mass producing crude reproductions of the artisan's work, however, industry, in turn, had to create new types and forms that were the natural expression of the processes of mechanized industry. Whereas Ruskin felt that architecture was essentially ornamental, Adolf Loos felt that architecture should be stripped from ornaments and be the exponent of a simplified, unornamented architecture expressing only its practical

functions. Yet it is evident that Ruskin and Morris in their way and Loos in his move toward the same end, that they insisted on the unity of structure and decoration, whether the decoration was reabsorbed in the structure, or the reverse. For both, the common enemy was academic architecture imitating a historical style or combining several.

Antonio Sant'Elia published his Manifesto of Futurist Architecture in Italy in 1914. He, too, proclaimed the need for unity of structure and decoration and extolled the possibilities inherent in the new methods of construction for the use of space and saw space as the dimension of the feverish life of the machine age. To modern architects Sant'Elia's work, which is not devoid of idealistic reasoning, is a call to arms not to forsake artistic goals and not to confuse utilitarianism with what is actually only an awareness of a historical actuality.

The argument would probably have been confined to practical and social unity if the visual experience of Cubism had not transformed it into stylistic terms. Credit for having realized that the problem of architecture is above everything visual must go to Le Corbusier, a Swiss architect working in France. He stated that architecture is a matter of surfaces, and voids. However, in order to inform surface, mass, and void with pure and absolute values, it is necessary to discard the spatial or perspective conventions that determine the value of each element in relation to a preconceived image of space. Consequently, it becomes necessary to consider form only in relation to itself, and to its own function so that it is the logical solution of a solidly founded problem. The problem is naturally a practical one, but to find its formal expression and its rational forms, the empirical data governing execution have to be reduced to a system.

Universalism and the International Style

Le Corbusier intends his argument to be a social argument but he bases it on a mistaken premise: that of reducing a factual situation to an abstract scheme, which necessarily obscures its historical awareness. He attempts to realize his reform architectural taste within a framework of social reform but when he thinks in utopian terms of an ideal civilization – the machine civilization – instead of seeing it within the historical progression of society, he makes the same mistake as the Cubists. Le Corbusier, like the Cubist theorists, is inclined to see new evidence for an architectural rationality whenever he can find absolute formal values in ancient monuments. Without being aware of it, he then goes on to reassert the old myth of formal clarity in Classical art as compared to the romanticism of the north and then postulates the superiority of Mediterranean cultures. Unconsciously, his tendency toward a social or international architecture, though free from traditional schemes, is finally caught in a universalism based on the ascendancy of Western intellectualism.

The idea of international style in architecture and industrial design proposed by Walter Gropius is much more significant. The horrors of war and the misery of the post-war

years turned his thought toward the possibilities of an architecture that would be a new force for civilization and would help to bridge the gap between reality and the ideal. His European work covers only the short period of the Weimar Republic, for with Hitler's rise to power came persecution and immigration to the United States where he had continued his work. Gropius sees architecture not as the image but rather as the instrument of a better society. And through his teachers, Behrens and Van de Velde, Gropius' close ties with the movement for a social art based on industrial production, which takes Morris' position as a starting point and goes on to found the Deutsche Werkbund, the first art school geared to the industrial production of quality furniture and finishing based strictly on function.

Gropius sees the module less as rational than as pure form, the image of perfection that the mechanized process can reproduce with absolute precision. The Bauhaus, as the school of Arts and Crafts at Weimer was called after Gropius recognized it in 1919 and which some years later was moved to Dessau, was much more than art school. It was a meeting place for artists from many countries – Kandinsky from Russia, Klee from Switzerland, Moholy-Nagy from Hungary - united by a common interest in the new art that recognized the positive expression of unification through an international social consciousness that is the direct expression of the historical reality of a democratic and socialistic Europe. The social revolution of the Expressionists and the destructive anarchy of the Dadaists were taste and that technical, social, or political considerations could find positive rather than polemical expression only by making form concrete. These are the conclusions reached by Nikolas Pevsner for architecture and by Lewis Mumford for city planning.

Architecture requires us to understand something of the nature of things by observing them. Architecture is a conscious, often self-conscious, crystallization of certain cultural values; architects will have to acknowledge explicitly their responsibility in presenting and dramatizing them. The present custom of preferring such substitutes as functionalism, or vernacular architecture bears eloquent testimony to the architect's lack of faith in his social role and the current public realms.

Conclusion

Architecture crystallizes specific cultural values, and not others, and the architect, as opposed to the sociologist or engineer, has been delegated to this role by society. But if a viable architecture is to emerge, then society will have changed in important ways as well. Consider those explicitly cultural commissions which society has given its major architects; the Guggenheim Museum and Lincoln Center in New York, the Opera House in Sydney, and the Royal Festival Hall in London. Each one of these projects is formally interesting, but each one is being asked to fulfill a role in city life. Hence, in architectural terms, what one often finds in these buildings is either a camp presentation of failed

seriousness or an overblown gesture of exaggerated importance. The fault probably lies, if anywhere, more with the lack of serious commissions than with the architects.

It is this general loss of credibility in politics which has been the cause of modern architecture. The Eiffel Tower, the Vehicles Assembly Building are brilliant substitutes for more serious cultural tasks. But then another problem arose, for like Le Corbusier, they tried to elevate the house to the palace, the private to the public and the utilitarian to the cultural. By contrast, it was only in post-revolutionary Russia and only for a short time that architects achieved a renewed faith in significant social functions – the Palace of Labor is an example, and they achieved this by re-inventing these functions along with society.

As a result, they produced, an architecture which was both formally brilliant and explicitly tied to social goals that were progressive, idealist and believable at the time. Then architects with a sense of purpose are rather restricted to their alternatives. Some, like Robert Venturi, have tried to make architecture out of the negative forces by either contradicting or expressing them ironically, and one has to admit that this critical approach is far superior to the usual suppressions because it acknowledges the true nature of these forces. Meanwhile in architectural terms what can be done? At the very least, the architect can continue to offer ideal alternatives such as Bruno Taut's Community Center, or Tony Garnier's Industrial City, with its clearly defined public realm and basis in Utopian socialism alternatives which serve the purpose of keeping alive a critical opposition to the present system and articulating a positive course of action should a revolution occur.

The magnitude of the problems and opportunities facing the architect today requires him to be both aware of the interaction of disciplines and the forces that act in his time, and be responsive and sensitive to them. He needs to respect as a whole, a unity, what appears as divided and complex, but not by ignoring contrary factors or applying the few past answers. Oversimplification is thus replaced by a synthesis in which even the determinants themselves cannot be considered as absolutes. Architecture must look beyond contemporary forces and discipline and must recognize that objects themselves are perceived and reacted to in different ways by different people.